

PATENT
Docket 23IDALEX5

Applicants traverse the omnibus rejection of claims 1-6, 9, and 25-33 under Section 102(b) over Uchida.

Applicants also traverse the examiner's mere two-line explanation of the rejection which fails to meet the completeness and clear explanation requirements of the MPEP including sections 707.07 and 707.07(f).

In *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984), anticipation requirements under 35 U.S.C. §102 are presented as follows:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. In deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify corresponding elements disclosed in the allegedly anticipating reference. (citations omitted).

The Board of Patent Appeals and Interferences in *Ex parte Levy*, 17 USPQ2d 1461, 1462 (B.P.A.I. 1990) cites *Lindemann* to place the burden of proof upon the examiner as follows:

Moreover, it is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.

Furthermore, the Federal Circuit further held in *Lewmar Marine, Inc. v. Barient, Inc.*, 3 USPQ2d 1766, (1987), cert. denied, 108 S.Ct. 702 (1988) that:

"[t]hat which would literally infringe if later in time anticipates if earlier than the date of invention."

Accordingly, anticipation under 35 U.S.C. §102 requires disclosure by a single reference of each and every element recited in a claim functioning in the same manner to produce

PATENT
Docket 23IDALEX5

the same result as the claimed invention.

Applicants' claimed invention and the applied reference Uchida are both quite esoteric and sophisticated, and fundamentally different from each other, which leads only to speculation as to what features the examiner is using in Uchida for anticipating the many different claims being rejected.

Nevertheless, affording due deference to the examiner's evaluation of the claims and this applied reference, Applicants note the substantial breadth of interpretation of Applicants' claims being proffered by the examiner, which correspondingly enlarges claim scope in later infringement analysis of the file wrapper.

However, the examiner has failed to afford due weight to specific features and cooperation of features in Applicants' claims which well distinguish over this reference.

Figures 1 and 3 of Uchida illustrate two alternate embodiments of the two modules 11,12, and figure 2 illustrates an exemplary embodiment of one of the modules, all as described in the Uchida reference.

In figure 1 of Uchida, one flow circuit (10) is provided for the chilled water 10 in one leg through the first module 11, and in a series leg through the second module 12. In figure 3, the first circuit 10 is S-shaped versus the U-shape in figure 1.

Also in figures 1 and 3 is a second flow circuit (13) for the cooled water 13 in one U-shaped leg in the first module 11, and in another U-shaped leg in the second module 12, both legs having a common inlet junction for the cooled water 13.

Figures 1 and 3 further illustrate a third flow circuit (101) for spraying the absorption solution 101,111 into the first module, and a fourth flow circuit (102) for spraying the absorption solution 102,112 into the second module 12.

Note, quite fundamentally, that all four flow circuits

PATENT
Docket 23IDALEX5

inside the two modules 11,12 are independent from each other, and the corresponding fluids being channeled therethrough remain separated from each other, and do not mix.

This is also illustrated in figure 2 of Uchida for one of the modules 11,12. Notice the first circuit 10 which channels the chilled water 10 through the bank of pipes 9 inside the module.

Notice the second circuit 13 which channels the cooled water 13 through the bank of pipes 17 and 15 inside the module.

And, notice the separate circuit which sprays the absorption solution 6 outside the pipes 17; and the separate circuit which sprays the refrigerant 7 outside the pipes 9; and the separate circuit which channels the refrigerant vapor 14a outside the pipes 15.

Note again, that the water circuits 10 and 13 are independent from the three circuits for the absorption solution 6, liquid refrigerant 7, and refrigerant vapor 14a.

Since the examiner has failed to explain the requisite one-to-one correspondence of elements from Uchida with the several claims being rejected, it is not seen how even a prima facie rejection has been made; which correspondingly leads to an exceptionally broad interpretation of Applicants' claims under this reference.

However, the examiner has clearly afforded little if any weight to the different elements and cooperation thereof recited in Applicants' claims; and has overlooked a fundamental feature thereof.

More specifically, claim 1 recites a first counterheat channel 30 joined in flow communication with the first main channel 28, and means 36 for injecting an evaporative coolant 38 into the first counterheat channel 30.

In other words, these elements are structurally and functionally interconnected so that the evaporative coolant 38 is injected into the first counterheat channel 30 in which

PATENT
Docket 23IDALEX5

will flow the primary gas stream 18.

Method claims 5 and 25 expressly recite that a hot primary gas stream 18 is channeled through the first main channel 28, and further flows through the first counterheat channel 30. The evaporative coolant 38 is injected into the first counterheat channel 34 and therefore joins the primary gas also flowing therethrough.

The examiner has failed to identify any corresponding structure or method in Uchida, since the various circuits thereof are specifically configured for an absorption chiller, and are quite different than Applicants' claimed duplex exchanger in structure and operation.

Those circuits in Uchida are expressly independent, and do not allow the absorption solution 101,102,6; or the liquid refrigerant 7; or the refrigerant vapor 14a to join or mix with the chilled water 10 or the cooling water 13 in their independent circuits.

For this basic reason, alone, Uchida cannot and does not anticipate claims 1, 5, and 25, and the examiner has not shown otherwise.

Claims 1, 5, and 25 recite various elements in specific cooperations, and the examiner has failed to identify what elements in Uchida are considered to match what elements in these claims. The rejection is therefore subject to speculation, and places an unwarranted burden on the Applicants to second guess what the examiner may have had in mind.

Nevertheless, in view of the independent flow circuits of Uchida as described above, it is not seen how any interpretation thereof could possibly anticipate any of Applicants' claims, which instead have special cooperation of the various flow channels therein.

Claim 2 recites that the second counterheat channel 34 is joined in flow communication with the first main channel 28. This then permits the primary stream to flow

PATENT
Docket: 23IDALEX5

therebetween. This distinguishes over Uchida since the various flow circuits thereof are independent.

Claim 3 recites means 36 for injecting an evaporative saturant 38 into the second counterheat channel 34, which channel is joined in flow communication with the first main channel, and therefore receives the primary stream therefrom for saturation thereof. This distinguishes over Uchida since the various flow circuits thereof are again independent.

Claim 4 recites that the second counterheat channel 34 is additionally joined in flow communication with the first counterheat channel 30. In this configuration, both the first and second counterheat channels 30,34 are joined to the same first main channel 28, and the two counterheat channels are also joined to each other.

As indicated above, the various circuits of Uchida are independent from each, and clearly are not joined together in flow communication in any manner anticipatory of claim 4, and the examiner has not shown otherwise.

The fundamental distinguishing feature of method claim 5 over the Uchida reference has been addressed above.

Furthermore, claims 5 and 25 also expressly recite that a hot primary gas stream 18 is channeled through the first main channel 28. In Uchida, chilled water 10, cooling water 13, liquid refrigerant 7, and absorption solution 6 are disclosed, and the examiner has failed to specify which of these is either hot or is a gas.

Uchida also discloses the refrigerant vapor 14a, but the examiner has failed to explain how this is a hot gas stream initially channeled in a first main channel, which must cooperate with the other elements of these claims, clearly overlooked by the examiner.

Claims 5 and 25 also recite channeling a hot secondary fluid stream 20 through the second main channel 32. Yet again, the examiner has failed to identify any analogous feature in Uchida since the various fluids thereof as listed

PATENT
Docket 23IDALEX5

above do not appear to meet this recited feature.

Claims 5 and 25 further recite that the evaporative coolant 38 is injected into the first counterheat channel 30, and the evaporative saturant is injected into the second counterheat channel 34; and the examiner has failed to show how Uchida discloses these features, when the various circuits thereof are clearly independent as explained above.

Claims 6 and 26 recite discharging the primary stream 18 from the first counterheat channel 30 into an intermediate stage of the second counterheat channel 34.

The examiner has failed to identify any such structure in Uchida when the various circuits thereof are independent from each other, and as clearly illustrated in figures 1 and 3 the circuits 10,13 extend completely across the respective modules 11,12 without even a hint of any intermediate stage communication therein.

Claims 9 and 33 recite injecting excess evaporative coolant into the first counterheat channel 30 for cooling thereof, and removing the cooled excess evaporative coolant from the first heat exchanger 24.

The absorption solutions 101,102 sprayed into the two modules 11,12 in Uchida are clearly not injected into either circuit 10,13; nor is there any teaching in Uchida that those solutions have any excess capability since they do not function in the same manner as recited in Applicants' claims.

Claim 27 recites evaporatively cooling the primary stream 18 in the first main channel 28 for lowering the wet bulb temperature thereof toward the dew point temperature of the incoming primary stream; and saturating the primary stream in the first counterheat channel 30 to the wet bulb temperature of the cooled primary stream discharged from the first main channel 28.

The examiner has clearly overlooked this claim and the series of claims dependent therefrom. The examiner has failed to identify not even one relevant teaching in Uchida,

PATENT
Docket 23IDALEX5

since Uchida is quite different in construction, function, and operation.

Fundamentally in Uchida, chilled water 10 flows in one circuit and cooling water 13 flows in another circuit; with the absorption solution 6, liquid refrigerant 7, and refrigerant vapor 14a being separately channeled.

Where in Uchida is any teaching that any of these fluids is a hot gas stream as recited in claim 27? How does the examiner equate the water 10/13 of Uchida for a gas?

How does the examiner reconcile the wet bulb temperature and dew point temperature and saturation recited in claim 26 with some unidentified feature in Uchida? These features are clearly not relevant to the chilled or cooling water in Uchida.

Claim 28 recites heating the cooled primary stream in the first counterheat channel 30 by the hot primary stream in the first main channel 28 for raising the dew point temperature thereof and saturating the primary stream therein.

Yet again, the examiner has failed to identify any analogous features in Uchida since heating the cooled primary gas stream, raising dew point temperature, and saturation have no analogous features in Uchida in which chilled and cooling water are channeled in different circuits.

Claim 29 recites evaporating the evaporative fluid in the primary stream 18 in the second counterheat channel 34 and thereby cooling the secondary stream 20 in second main channel 32 toward the wet bulb temperature of the primary stream in the second counterheat channel.

Yet again, the examiner has failed to identify any relevant features in Uchida, which teaches flow of the chilled and cooling water, for which evaporation and wet bulb temperature have no relevance, and the examiner has not shown otherwise.

Claim 30 recites heating the cooled primary stream 18 in

PATENT
Docket 23IDALEX5

the second counterheat channel 34 by the hot secondary stream in the second main channel 32 for increasing the wet bulb temperature and saturation thereof.

Note that the cooled primary stream 18 is a gas being heated for increasing wet bulb temperature and saturation, yet again having no analogous counterpart in the Uchida reference, and the examiner has not shown otherwise.

The chilled and cooling water of Uchida, and secondary fluids, clearly have no relevance to the features of this claim notwithstanding any broad interpretation thereof being contemplated, but not explained by the examiner.

Claim 31 recites injecting the evaporative saturant along an initial stage of the second counterheat channel 34; and superheating the primary stream 18 in the second counterheat channel 34 downstream of the initial stage using heat from the secondary stream channeled through the second main channel 32.

Note that Uchida clearly teaches chilled and cooling water flow having no relevance to this claim. And, superheating is a term of art having no relevance in Uchida, and the examiner has not shown otherwise.

Where is any teaching in Uchida of superheating any fluid, and how and by what mechanism? Can the chilled and cooling water be superheated in Uchida?

It is noted that claim 31 introduces identical features to claim 7, yet the examiner has only objected to claim 7 as containing allowable subject matter, but rejected claim 31. Why the different treatment? What subtlety is the examiner trying to communicate to the Applicants?

Claim 32 recites injecting the evaporative fluid 38 along an initial stage of the first counterheat channel 30; and superheating the primary stream in the first counterheat channel 30 downstream of the initial stage using heat from the main stream channeled through the first main channel 28.

Yet again the examiner has failed to identify any

PATENT
Docket 23IDALEX5

corresponding features in Uchida to support the rejection of this claim since superheating in Uchida is neither disclosed nor relevant, especially in view of the chilled and cooling water being channeled therein.

And yet again, the examiner has only objected to claim 8, which introduces features identical to claim 32; so why the different treatment by the examiner?

It is quite clear that Applicants' invention as recited in the various claims is profoundly different than the two-module absorption chiller disclosed in various embodiments in Uchida.

Mindful that typical examination practice permits inordinately broad interpretation of claims under examination, that interpretation must nevertheless be consistent with the specific features and cooperation thereof as recited in the individual claims, and as interpreted in light of the specification by one of ordinary skill in the art.

The examiner's mere two-line explanation of the rejection of the many claims 1-6, 9, and 25-33 is quite deficient and fails to establish even a prima facie showing.

Both Applicants' recited claims and the chiller of Uchida are sophisticated and esoteric, and correspondingly require suitable interpretation of the features therein, the functions they perform, the cooperation thereof, and the resulting operation.

The examiner has clearly overlooked the fundamental cooperation of the recited channels in Applicants' claims which are joined in special flow communication for the substantial advantages disclosed in the specification.

This is in stark contrast with the chiller of Uchida in which the various flow circuits are expressly independent from each other with the chilled water circuit 10 being independent from the cooling water circuit 13 without flow communication therebetween, and further separate from the

PATENT
Docket 23IDALEX5

absorption solution, liquid refrigerant, and refrigerant vapor circuits which cooperate therewith.

Accordingly, withdrawal of the omnibus rejection of claims 1-6, 9, and 25-33 under Section 102(b) over Uchida is warranted and is requested.

Applicants note the allowability of objected-to claims 7, 8, and 10-24, but the rewriting thereof is not warranted in view of the above remarks.

The additional references cited, but not applied, have been noted. Applicants traverse the examiner's bald contention that these references disclose "related limitations of the applicant's claimed and disclosed invention," since the requirements under Section 102 and 103 are stringent, and mere parts shopping is not permitted.

Applicants' specification already recognizes the conventionality of various heat exchanger designs; yet Applicants' claims recite a novel combination of features having improved cooperation and function and performance which are patentable absent the requisite full showings under Sections 102 and 103, which showings cannot merely be made by bald reference to prior art apparatus in general.

Furthermore, the examiner has failed to show how reference Maisotsenko et al would be available under Sections 102 and 103 in view of the common inventorship, common ownership, and corresponding priority dates.

In accordance with the duty imposed by 37 CFR 1.104 and MPEP sections 707, 707.05, 707.07, and 707.07(g), the examiner is requested to reconsider all the art of record, including the additional references not applied, to ensure full compliance with the required thoroughness of examination.

In re Portola Packaging, Inc., 42 USPQ2d 1295 (Fed. Cir. 1997) emphasizes the importance of complying with this duty to ensure that all references of record have been fully considered by the examiner in the various combinations

PATENT
Docket 23IDALEX5

thereof. And, the Board of Appeals has further elaborated on the importance of this examiner duty in Ex parte Schricker, 56 USPQ2d 1723 (B.P.A.I. 2000).

In view of the above remarks, allowance of all claims 1-33 over the art of record is warranted and is requested.

Respectfully submitted,



Date: 11 January 2005

Francis L. Conte
Registration No. 29,630
Attorney for Applicant

6 Puritan Avenue
Swampscott, MA 01907
Tel: 781-592-9077
Fax: 781-592-4618